

I CLAIM:

1. An animated toy doll comprising:
a hollow doll head component,
plural, changeable-position, movable facial-expression structures movably mounted on
5 said head component, and
a single, shared, rotary drive device rotatably disposed within said head component and
operatively drivably connected to said facial-expression structures, whereby
rotation of this device produces defined, coordinated, related, respective position-
changing motions in said structures;
10 wherein said drive device takes the form of plural co-axial, operatively connected,
different-diameter cylindrical elements.

2. The doll of claim 1, wherein said facial-expression structures are mounted
on said head component for bidirectional reciprocation.

3. The doll of claim 1, wherein said cylindrical elements form axially-spaced
portions of a unitary drum.

4. The doll of claim 1, wherein said facial-expression structures are generally
20 vertically reciprocable, and said drive device is supported for rotation about an upright
axis.

5. The doll of claim 4 which further includes a single, selectively power-
operated drive motor disposed within said head component and drivingly connected to
25 said drive device, operable to rotate the device.

6. The doll of claim 1 which further includes a single, selectively power-operated drive motor disposed within said head component and drivingly connected to said drive device, operable to rotate the device.

5 7. An animated toy doll comprising
a hollow doll head component,
generally vertically reciprocable, openable and closable eye and mouth structures
movably mounted on said head component, and
a single, shared, rotary drive device rotatably disposed within said head component and
operatively, drivably connected to said eye and mouth structures, whereby rotation
of this device produces defined, coordinated, related, respective opening and
closing motions in the eye and mouth structures.

10 8. The doll of claim 7 which further includes a single, selectively power-operated drive motor disposed within said head component and drivingly connected to said drive device, operable to rotate said device.

15 9. The doll of claim 8, wherein said drive device takes the form generally of an elongate, upright-axis, cylindrical body having upper and lower cylindrical ends, which body is mounted within the head component for rotation about its upright long axis, and a pair of elongate, motion-promoting, generally circumferential drive tracks formed, one each, on the outside of a different one of said ends, with each track being operatively associated with a different one of said eye and mouth structures.

20 10. The doll of claim 9, wherein each track, progressing therealong circumferentially about its associated cylindrical body end, is at least partially defined by adjacent track regions that are characterized by having different longitudinal positions relative to the axial length of said body.

11. The doll of claim 10, wherein said tracks are circumferentially continuous, and generally closed-loop in character.

12. The doll of claim 11 which further includes two pivoted actuators, one
5 operatively connected to and for each of said eye and mouth structures, and the actuator for each associated eye or mouth structure provides, at least in part, the operative driving connection between that associated structure and the associated track in said rotary drive device.

13. The doll of claim 12, wherein the actuator associated with each of said eye
10 and mouth structures includes a track follower which is drivingly engaged with the associated track.

14. The doll of claim 7, wherein said drive device takes the form generally of
an elongate, upright-axis, cylindrical body having upper and lower cylindrical ends, which body is mounted within the head component for rotation about its upright long axis, and a pair of elongate, motion-promoting, generally circumferential drive tracks formed, one each, on the outside of a different one of said ends, with each track being
15 operatively associated with a different one of said eye and mouth structures.

20 15. The doll of claim 14, wherein each track, progressing therealong circumferentially about its associated cylindrical body end, is at least partially defined by adjacent track regions that are characterized by having different longitudinal positions relative to the axial length of said body.

25 16. The doll of claim 15, wherein said tracks are circumferentially continuous, and generally closed-loop in character.

17. The doll of claim 16 which further includes two pivoted actuators, one operatively connected to and for each of said eye and mouth structures, and the actuator for each associated eye or mouth structure provides, at least in part, the operative driving connection between that associated structure and the associated track in said rotary drive device.

18. The doll of claim 17, wherein the actuator associated with each of said eye and mouth structures includes a track follower which is drivingly engaged with the associated track.

19. The doll of claim 7, wherein said drive device is configured to produce, with its rotation, a pattern of related eye and mouth openings and closings in plural, successive, cyclic phases, including both (a) phases in which one only of the eye or mouth structures is shifting in some manner between open and closed conditions, while the other structure retains a non-changing condition, and (b) phases in which both eye and mouth structures retain non-changing conditions.

20. The doll of claim 19, wherein said drive device is specifically configured, whereby a motion in either direction between an open and a closed condition is permitted for only one of said eye and mouth structures at a time.

21. The doll of claim 19, wherein said drive device is specifically configured, whereby each phase that involves any motion of one of said eye and mouth structures in some manner between open and closed conditions is followed by a next-successive phase which involves no such motion in either of these structures, and vice-versa.

22. Animated doll-head structure comprising
a head component with a hollow interior,
nominally independently openable and closeable movable eye and mouth structures, each
mounted for reversible opening and closing motions on said head component,
5 for each of said movable structures, and disposed within the interior of said head
component, a respective, associated, operatively connected pivoted actuator
including a follower drivable to move the actuator in a manner producing related
motions and positioning controls in the associated movable eye or mouth structure,
for each of said followers, and also disposed within the interior of said head component, a
10 respective, associated, operatively connected, cyclically drivable rotary track
instrumentality, operable, with rotation of the instrumentality, to create related
cyclical movements in the follower and in the follower's associated actuator, thus
to produce related cyclic motions and positioning controls in the associated
movable eye or mouth structure,
15 rotary interconnect structure operatively and drivingly interconnecting said track
instrumentalities for co-rotation as a unit with interconnect structure, and
a single, power-operated motor disposed adjacent and drivingly connected to said
interconnect structure within the hollow interior of said head component, operable
to rotate the interconnect structure so as to create, ultimately, cyclic opening,
20 closing and position control in and for said eye and mouth structures.

23. Animation structure in a doll head which is hollow, said animation structure, with the doll head disposed substantially upright, comprising:

movable eye structure mounted on the head, raisable and lowerable appropriately between open and closed conditions,

5 movable mouth structure mounted on the head below said eye structure, raisable and lowerable appropriately between closed and open conditions,

a pivoted actuator for each of said eye and mouth structures, drivingly connected thereto and each including a portion which is generally reversibly vertically movable to effect driving interaction with the associated eye or mouth structure,

10 a single, elongate rotary drive drum mounted within the head for rotation about the drum's long axis which has a generally vertical disposition, and which drum is located closely adjacent said eye and mouth structures,

two, vertically disposed, generally circumferential drive tracks formed on the outside of said drum, each drivingly engaged with a different one of said actuator's said portions, and

15 a single, power-operated drive motor disposed within the doll head, drivingly connected to said drum, and having a drive axis which is substantially coincident with said drum's said long axis, operable to drive said drum in rotation, thus to effect, through interaction with said actuators, relative, coordinated raising and lowering
20 of said eye and mouth structures.

24. The doll head of claim 23, wherein said motor is selectively operable unidirectionally to produce successive, cyclic, continuous rotation of said drum, thus to create successive, cyclic raisings and lowerings of said eye and mouth structures.

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25. An animated toy doll comprising
a hollow body component,
plural, outwardly visible, changeable-position, movable body-expression structures
movably mounted on said body component,
5 for each said body-expression structure, a rotary drive member rotatably disposed within
said body component and operatively drivably connected to its associated body-
expression structure, whereby rotation of the device produces defined position-
changing motions in that structure and
interconnection structure operatively interconnecting said rotary drive members for
10 defined, coordinated rotational movements;
wherein each drive member comprises a cylindrical structure having a diameter and an
axis of rotational symmetry which is also an axis of rotation for the cylindrical
structure, and said cylindrical structures have different respective diameters, and
axes of rotation which are common to one another.

26. The doll of claim 25, wherein said drive members form axially spaced
portions of a unitary drum.

27. The doll of claim 26 which further includes a single, selectively power-
20 operated drive motor disposed within said body component and drivingly connected in
common to said rotary drive members.

28. The doll of claim 26 which further includes a single, selectively power-
operated drive motor disposed within said body component and drivingly connected in
25 common to said rotary drive members.

29. The doll of claim 25 which further includes a single, selectively power-operated drive motor disposed within said body component and drivingly connected in common to said rotary drive members.